

UES No. 2487



U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
NATIONAL ENVIRONMENTAL SATELLITE CENTER
WASHINGTON, D.C. 20233

SEP 1 1966

August 29, 1966

IN REPLY REFER TO: S

Mr. Kirby J. Hanson
Environmental Science Services
Administration
National Environmental Satellite Center
1024 Regent Street
Madison, Wisconsin 53715

Dear Kirby:

This is in further reply to my letter to you of July 25 concerning the proposed contract with the University of Wisconsin for the evaluation of ESSA III radiometer data.

I have tried to list those items of work covered in the draft proposal, identify those items of work which appear to be covered by the present grant, and thus determine those items not covered under the present grant. To determine how we should proceed with this matter, we should first determine the data format requirements of internal users (ESSA and University of Wisconsin) and external users (through the archives at NWRC). We then can analyze the work required to provide these products and determine who is in the best position to perform each work element. Those items which we agree should be conducted by the University of Wisconsin, over and above the grant activities, can be covered by a separate contractual arrangement. I am enclosing a copy of my notes on this matter which may be useful for our discussions next week.

I assume that both you and Professor Suomi still plan to arrive here for discussions on September 6. See you next week.

Sincerely,

A handwritten signature in cursive ink, appearing to read "D. S. Johnson".

David S. Johnson
Director

Enclosures
cc: Professor Suomi

Analysis of Second draft proposal

(1)

o Proposed Work

I. To provide guidance to NESC in the reduction of ESSA III radiometer data (p. 1).

A. Develop calculations to convert digital counts to radiation values.

1. Convert present equations for hemispheres to handle flat plate & cone sensor data. (pp. 2-3)

2. Develop suitable data control program. (pp. 2-3)

3. Develop & evaluate in-flight calibration techniques. (p. 3)

a. Sensor constants

b. Cosine response of sensors.

4. Develop weighting functions for ESSA III single local time sample so that daily radiation values can be inferred. (p. 4).

5. Modify required software to run on NESC computers. (p. 3).

B. Carry out the quality control function of operational data processing & application of in-flight calibration (p. 5)

1. Assist NESC in taking over this responsibility (p. 5)

C. Provide consultant services to NESC in the data reduction (p. 5)

D. Subcontract with Fred Hause, GCA Corporation, Inc. the computer software (p. 5).

o Problems

I. Conflict with work to be done under the grant.

A. Those normally paid from the grant shall be available as consultants without need for an additional contract. (My item I.C. in previous section)

- 1. Sonnie ($\frac{1}{4}$ time) 4. Proj. Assoc., Consultants (3)
- 2. Parent ($\frac{1}{4}$ time) 5. Proj. & Research Ass'ts. (# 14, 55c)
- 3. Professor (equiv. to 1 full time)

B. The Grant already calls for some of this work. Need to clarify what additional tasks are required. For example, present draft proposal states (p.4) that the following evaluation of TOS radiation data will be done ~~under~~⁽¹⁾ under the grant:

1. Verify present (equation 3) program to accept flat plate disk sun-cone sensor data. (Same as my item IA 1?)
2. Verify in-flight calibration procedure. (Same as my item IA 3?)
3. Determine weighting function for single local time sample of reflected radiation due to Sun-synchronous orbit. (Same as my item IA 4?)
4. Compare with ATS data. (Not included in draft proposal.)

II. Based on the above, it appears that the following items are not covered under the present grant and should be covered by some arrangement, if we desire to have the work done.

A. Develop suitable data control program (my item IA 2).

B. Modify required software to run on NESc computers (my item IA 5).

C. Carry out quality control function on ESSA III data until NESc can assume responsibility (my item IB).

III. From above, it appears that additional support is required specifically only for establishment & operation of quality control procedure & conversion of software for use on NESc computers, all with respect to the "operational" (routine) processing of ESSA III radiometer data.

o How to proceed

I. Determine, at least in general terms, format of radiation data output.

A. Internal users:

1. U. of Wisconsin - They say they want sensor counts
This is planned; format has been agreed.

2. MSL/NESc (Winston)

B. External users (to be archived at NERC).

I. Should attempt to have format compatible with "internal users" and with the TIROS LIRIR data.

a. When will U.Wisc. be ready to archive their data? Format?

II. Analyse work required to provide products determined in I above and decide who is in best position to do each phase.

A. Develop suitable data quality control procedures (U.Wisc.?)

B. Modify existing software to run on NESCs computers (NESCs?)

C. Carry out quality control functions

1. For life of ESSA DT or 6 months, whichever ever period is shorter (U.Wisc.?)

2. Beyond 6 months (NESCs?)

D. Develop any new equations required + flow-chart for subsequent software development (U.Wisc.?)

E. Write software for NESCs computers (NESCs?)

(Note: In the listing above, I have attempted to indicate possible items of work required, beginning that covered in the grant, & indicated my opinion as to which organization probably,

would be best equipped to carry out the work. We still need to determine what should and can be done, then determine who will do each phase of work.)

III. Upon reaching decision of what shall be done by whom, enter into contract with A.W.S.C. for those phases of work they will perform.